

Formal Matters

Applicant thanks the Examiner for considering the documents submitted in the Information Disclosure Statement filed September 6, 2006 and for indicating such consideration by returning a signed and initialed copy of the form PTO-1449 submitted therewith.

Applicant further notes with appreciation that the Action indicates acceptance of the drawings submitted on September 6, 2006.

Furthermore, Applicant notes with appreciation that the claim of priority under 35 U.S.C. § 119 has been acknowledged and all copies of certified priority documents have been received by the Office.

Claim Rejections under 35 U.S.C. § 103(a)

The Office Action raises the following obviousness rejections:

- a.) Claim 28 is rejected under 35 U.S.C. § 103(a) for allegedly being obvious over U.S. Patent No. 4,313,338 to Abe et al. in view of Eisele et al., Sensors and Actuators B, vol. 78, pp.19-25, 2001;
- b.) Claim 29 is rejected under 35 U.S.C. § 103(a) for allegedly being obvious over Abe et al. in view of Eisele et al. and further in view of Mizuguchi et al., Ber. Bunsenges. Phys. Chem., vol 97, no. 5 pp.684-693, 1993;
- c.) Claims 20-22, 24, 26, and 27 are rejected under 35 U.S.C. § 103(a) for allegedly being obvious over Abe et al. in view of Eisele et al., and in further view of U.S. Patent Application Publication No. 2003/0153088 A1 to DiMeo et al.;
- d.) Claim 25 is rejected under 35 U.S.C. § 103(a) for allegedly being obvious over Abe et al. in view of Eisele et al. and further in view of DiMeo as applied in rejection c.) and further in view of Mizuguchi;

e.) Claims 20 and 23 are rejected under 35 U.S.C. § 103(a) for allegedly being obvious over Eisele et al. in view of DiMeo et al.

The Action asserts that each combination of cited documents either discloses all the elements of the rejected claims or alternatively renders them obvious. The Action also disregards all elements of the claims directed to protons and proton addition as these elements are directed to an “intended operation,” also known as “intended use.”

With respect to rejections a.)-d.), Applicant notes that the Action relies in each of the rejections on the combination of Abe et al. in view of Eisele. Applicant respectfully submits that this combination is improper.

As the Examiner is aware, to establish a *prima facie* case of obviousness, all claim limitations must be taught or suggested by the prior art. *See, In re Royka*, 490 F.2d 981, 985, 180 USPQ 580, 583 (CCPA 1974); *see also, In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). While the *KSR* court rejected a rigid application of the teaching, suggestion, or motivation (“TSM”) test in an obviousness inquiry, the [Supreme] Court acknowledged the importance of identifying “a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does” in an obviousness determination. *Takeda Chemical Industries, Ltd. v. Alphapharm Pty., Ltd.*, 492 F.3d 1350, 1356-1357 (Fed. Cir. 2007) (quoting *KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1731 (2007)). If the prior art reference(s) do not teach or suggest all of the claim limitations, Office personnel *must* explain *why* the differences between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art (MPEP § 2141). Applicant submits that there is no reason to combine the cited documents.

No Reason To Combine Abe et al. With Eisele et al.

Referring to rejection a.), the Examiner relies on Abe et al. for allegedly disclosing a gas sensor comprising a metal oxide film, wherein the resistance value of the gas-sensitive film can be measured. The Examiner concedes that Abe et al. does not explicitly disclose an organic compound containing an introduced heterocycle comprising nitrogen, or an organic pigment selected from the

group recited in claim 28 further containing an introduced heterocycle (see Office Action, paragraph bridging pages 2 and 3). In order to cure this deficiency, the Examiner combines Abe et al. with Eisele et al. and relies on Eisele for disclosing polypyrroles and phthalocyanines. The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of invention to substitute or add to the metal oxide film as taught by Abe, because doing so would amount to nothing more than the simple substitution of one known gas sensitive layer for another. Applicant respectfully disagrees.

Initially, Applicant disagrees with the Examiner that the replacing or adding to the metal oxide film as taught by Abe et al. would constitute a simple substitution.

Referring to *KSR International Co. v. Teleflex Inc*, 127 S.Ct. 1727, 1731 (2007), Applicant respectfully submits that the Examiner has failed to provide *any* reason *why* one of ordinary skill should modify the metal oxide layer in Abe et al. and combine it with Eisele. Applicant respectfully submits that there is no discussion in Abe et al. regarding the modification of the metal oxide layer with an organic layer. There is nothing in Abe that suggests – one way or another – how the properties of any organic layer affect the end properties of the composition. Therefore, one of ordinary skill would not have modified Abe et al.

Even assuming, *arguendo*, that combining Abe et al. with a second document to modify the metal oxide layer to arrive at the claimed invention would be proper, the Examiner still has the burden under *KSR* to provide a *reason* why one skilled in the art would modify the metal oxide layer in Abe et al. with a compound chosen from the vast range of organic compounds, which includes, for example, all organic heterocycles, dyes and pigments, to single out the polypyrroles and phthalocyanines discussed in Eisele. Applicant notes that there is no discussion in Abe et al. regarding effects of polypyrroles, let alone polypyrroles containing a pigment of a specific nature such as phthalocyanine. Accordingly, in the absence of a reason that would cause one of ordinary skill to employ polypyrroles as substitute for the metal oxide layer in Abe et al., the two documents should not be combined.

Therefore, in view of the foregoing discussion, Applicant respectfully submits that, under *KSR*, the combining of Abe et al. with Eisele et al. is improper and for at least this reason, the withdrawal of the rejections a.)-d.) is requested.

No Reason To Combine Eisele et al. With DiMeo et al.

Addressing rejection e.), Applicant notes that the Office Action relies on the combination of Eisele et al. in view of DiMeo et al. Applicant respectfully submits that this combination is improper.

Referring to rejection e.), the Examiner relies on Eisele et al. for allegedly disclosing an FET gas sensor, comprising an organic compound containing and introduced heterocycle comprising a nitrogen atom. The Action concedes that Eisele et al. does not explicitly disclose an island-type arrangement, wherein the organic compound and the protonation catalyst contact each other as recited in claim 20 (see Office Action, paragraph bridging pages 9 and 10). In order to cure this deficiency, the Examiner combines Eisele et al. with DiMeo et al. and relies on DiMeo for disclosing the use of platinum catalytic islands deposited on top of the film. The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of invention to add to the film layer in Eisele et al a platinum catalytic island as disclosed in DiMeo. Applicant respectfully disagrees.

As noted above, under *KSR International Co. v. Teleflex Inc*, 127 S.Ct. 1727, 1731 (2007), Applicant respectfully submits that the Examiner has failed to provide *any* reason *why* one of ordinary skill should modify the film in Eisele et al. and combine it with DiMeo. Applicant respectfully submits that there is no discussion in Eisele regarding any modification of the film with an island arrangement. There is nothing in Eisele that suggests – one way or another – how the properties of a film modified with an island arrangement affect the end properties of the composition. Therefore, one of ordinary skill would not have modified Eisele et al.

Even assuming, *arguendo*, that combining Eisele et al. with a second document to rearrange the film to arrive at the claimed invention would be proper, the Examiner still has the burden under

KSR to provide a *reason* why one skilled in the art would modify the film layer in Eisele to include a platinum catalytic island as discussed in DiMeo. Applicant notes that there is no discussion in Eisele et al. regarding effects of additional parts such as a platinum catalytic island. Accordingly, in the absence of any reason that would cause one of ordinary skill to employ platinum catalytic island on the film disclosed in Eisele et al, the two documents should not be combined.

Therefore, in view of the foregoing discussion, Applicant respectfully submits that, under *KSR*, the combining of Eisele et al. with DiMeo et al. is improper and for at least this reason, the withdrawal of rejections e.) is requested.

CONCLUSION

In view of the foregoing amendments and remarks, Applicant submits that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. Favorable consideration with early allowance of all of the pending claims is most earnestly requested.

If there are any comments or questions, the undersigned may be contacted at the below-listed telephone number.

Respectfully submitted,
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